DOCKET SECTION

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 1997	:	DOCKET NO. R97-1

ANSWERS OF UNITED PARCEL SERVICE WITNESS KEVIN NEELS TO INTERROGATORIES OF UNITED STATES POSTAL SERVICE (USPS/UPS-T1-33 through 45)

(February 10, 1998)

Pursuant to the Commission's Rules of Practice, United Parcel Service ("UPS") hereby serves and files the responses of UPS witness Kevin Neels to interrogatories USPS/UPS-T1-33 through 45 of the United States Postal Service.

Respectfully submitted,

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ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-33. Please refer to page 30 of your testimony. Please provide the formula for the Baltagi-Li serial correlation coefficient you calculated.

Response to USPS/UPS-T1-33. The formula comes directly from the programs provided in LR-H-147 as they appear in Bradley's program and testimony. See, for example, USPS-T-14, page 50, equations 12-14.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-34. Please refer to Table 5 on page 32 of your testimony.

a. Please confirm that the table provides two columns of variabilities, one entitled "Bradley's Scrubbed Data" and one entitled "All Usable Observations." Please explain anything but an unqualified confirmation.

b. Please confirm that the variability listed for the Manual Parcel Sorting Activity is 40% for the "Bradley's Scrubbed Data" column but 32% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

c. Please confirm that the variability listed for the Manual Priority Mail Sorting Activity is 45% for the "Bradley's Scrubbed Data" column but 42% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

d. Please confirm that the variability listed for the SPBS-Priority Mail Sorting Activity is 80% for the "Bradley's Scrubbed Data" column but 73% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

e. Please confirm that the variability listed for the Cancellation and Mail Prep Activity is 65% for the "Bradley's Scrubbed Data" column but 53% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

f. Please confirm that the variability listed for the Pouching Activity is 83% for the "Bradley's Scrubbed Data" column but 81% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

g. Please confirm that there are 12 activities for which the variability is higher in the "Bradley's Scrubbed Data" column than it is in the "All Usable

Observations" column. If you do not confirm, please provide the number of activities for which the variability is higher in the "Bradley's Scrubbed Data" column.

h. Please confirm that there are 11 activities for which the variability is lower in the "Bradley's Scrubbed Data" column than it is in the "All Usable Observations" column. If you do not confirm, please provide the number of activities for which the variability is lower in the "Bradley's Scrubbed Data" column.

Response to USPS/UPS-T1-34. (a) Confirmed.

(b) Confirmed.

(c) Confirmed.

(d) Confirmed.

(e) Confirmed.

(f) Confirmed.

(g) Confirmed.

(h) Confirmed.

USPS/UPS-T1-35. Suppose that an estimated variability is 20 percentage points different from 100 percent. In your opinion, does that estimated variability support the assumption that the true variability is 100 percent? Please explain fully.

Response to USPS/UPS-T1-35. How one should interpret the evidence posed by this hypothetical depends upon a number of factors. Most important among these is the quality of the analysis that produced the estimate of variability. If the data upon which the study is based are unreliable, if the model is misspecified, or if the analysis is technically flawed, one should be extremely cautious in basing conclusions regarding variability on the study's results, regardless of the specific numerical value of the

estimate. If, however, one has no reason for concern regarding the quality of the analysis, other considerations come into play. If the estimate of variability produced by the study is, say, 80 percent and the standard error of that estimate is 2 percent, these results would suggest that it is unlikely that the true variability is 100 percent. If the estimate of variability produced by the analysis is 80 percent and the standard error of that estimate is 30 percent, one's interpretation of the results would probably depend upon what other evidence regarding variability is available. If one had prior reason to believe that variability is 100 percent, an imprecise variability estimate of 80 percent could be interpreted as being consistent with that prior belief.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-36. Suppose that an estimated variability is 30 percentage points different from 100 percent. In your opinion, does that estimated variability support the assumption that the true variability is 100 percent? Please explain fully.

Response to USPS/UPS-T1-36. See my response to USPS/UPS-T1-35.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-37. Please refer to page 11 lines 20-21 of your testimony where you state that adjustments for inflation and changes in wage levels "are not difficult to make."

a. Would you recommend the same easy adjustment for inflation that you would for wage levels.

b. Please explain in detail, the easy adjustments that you would make for inflation and changes in wage levels.

c. Would your recommended adjustment be the same for all activities? Please explain fully.

d. Would your recommended adjustments be the same for all sites? Please explain fully.

Response to USPS/UPS-T1-37. (a)-(b). No. These adjustments involve the use either of an index of prices or an index of wages. One could follow either of two approaches. The first approach involves the division of mail processing labor costs by an appropriate index to express those costs in real (i.e., inflation-adjusted) terms. One would then proceed with the analysis, taking the natural logarithm of real labor costs as the dependent variable. The second approach takes nominal (i.e., unadjusted) mail processing labor costs as the dependent variable and includes the natural logarithm of the inflation index as an independent variable. The second approach is probably superior, since it includes the first as a special case.

(c) Yes. The purpose of this adjustment is to capture the effects of general labor market conditions on labor costs. All activities at a given point in time at a given facility are subject to the same general labor market conditions.

(d) The answer to this question depends on the characteristics of the index used to make the adjustment, and on which of the two approaches described

above in my response to part (b) is chosen. If the index were included in the model as an additional independent variable, then other characteristics of facilities that needed to be taken into account in the adjustment process could also be incorporated into the model as additional independent variables. Building the adjustments into the model in this way would make it possible to apply a single adjustment process to all facilities.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-38. Consider two estimated variabilities, Variability A which is 85% and Variability B which is 75%.

a. Please confirm that the difference between the two variabilities is 10 percentage points. If you do not confirm, please provide the correct difference.

b. Suppose that the estimated Variability A is greater than the estimated Variability B for three reasons, (1) the technology of sorting is different, (2) the time periods of estimation are different, and (3) the use of the operations are different. Please provide what part of the 10 percentage point difference is ascribable to each of the three reasons.

Response to USPS/UPS-T1-38. (a) Confirmed.

(b) The hypothetical situation posed by this question provides no basis for forming an opinion on the relative importance of the three factors cited.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-39. Please refer to page 27 of your testimony where you state:

> Bradley's decision to eliminate observations involving low levels of piece handling also raises questions about the representativeness of his results.

a. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 9 observations were eliminated for the OCR activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

b. Please confirm that there are 21,345 observations in the OCR data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

c. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 57 observations were eliminated for the manual letter activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

d. Please confirm that are 28,648 observations in the manual letter data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

e. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 47 observations were eliminated for the BCS activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

f. Please confirm that there are 26,426 observations in the BCS data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

g. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 73 observations were eliminated for the LSM as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

h. Please confirm that there are 23,251 observations in the LSM data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

i. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 118 observations were eliminated for the manual flat activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

j. Please confirm that there are 28,504 observations in the manual flat data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

k. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 74 observations were eliminated for the FSM activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

l. Please confirm that there are 21,544 observations in the FSM data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

m. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 1,148 observations were eliminated for the manual parcel activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

n. Please confirm that there are 24,814 observations in the manual parcel data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

o. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 15 observations were eliminated for the SPBS Non-Priority activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

p. Please confirm that there are 6,775 observations in the SPBS Non-Priority data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

Response to USPS/UPS-T1-39. (a) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(b) Confirmed.

(c) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(d) Confirmed.

(e) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(f) Confirmed.

(g) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(h) Confirmed.

(i) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(j) Confirmed.

(k) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(l) Confirmed.

(m) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(n) Confirmed.

(o) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(p) Confirmed.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-40. Consider the following model:

~=~ _i~+~ `X_it~+~varepsilon_it, ~~~i~=~1,`.`.`.,` N;~~t~=~1,`.`.`.,`T.

where y_{it} is the dependent variable, $_i$ is a vector of site-specific constants, X_{it} is the explanatory variable and $_{it}$ is independently identically distributed, with mean zero and variance ^{2}.

If this model is estimated by Ordinary Least Squares (OLS) with cross-sectional data, please confirm that the probability limit of the OLS estimator is given by:

``{ hat}_LS~=~ ~+~{COV(X_it,`` _i)} over {{ _x}^2}

ma_x}^2

where

is the variance of X_{it}.

If you do not confirm, please provide what you think the probability limit of the OLS estimator is.

Response to USPS/UPS-T1-40. As stated the question is incorrect and cannot be answered. The question assumes a cross-sectional dataset. Therefore, the question assumes T=1. As a result, this model cannot be estimated as specified because the number of parameters exceeds the sample size.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-41. Please refer to page 5, lines 9 and 10, of your testimony.

a. Did you review the professional econometric literature in preparation of your testimony?

b. Please identify and summarize all empirical studies conducted prior to Docket No. R97-1 that you are aware of that produce volume variabilities of 100% or more for manual letter and manual flat sorting operations at mail processing facilities. Please provide copies of those studies.

c. With respect to the empirical studies identified and summarized in part (b.) above, please answer the following questions: i.

ii. What were the measures of volumes used? Were they piece handlings, RPW pieces, ODIS pieces?

iii. How were the dependent variables defined? Specifically, were they defined as costs or workhours?

Response to USPS/UPS-T1-41. (a) Not all of it.

(b) I am not aware of such studies.

(c) N/A.

USPS/UPS-T1-42. Please refer to the "cross-sectional" volume variabilities that you present at table 1, page 7 and table 6, page 41 of your testimony. Please confirm that, in your view, both the table 1 variabilities and the table 6 variabilities qualify as estimates of "long-run volume variabilities." If you do not confirm, please explain why either set of variabilities do not constitute, in your view, estimates of long-run variabilities.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

Response to USPS/UPS-T1-42. Each set of variabilities could be interpreted as estimates of the "long-run" volume variability.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-43. Please consider the following hypothetical. There are two processing facilities, X and Y. Volume processed in manual letter sorting operations is initially twice as high at facility Y than at facility X. Suppose that manual letter sorting volume at X begins to increase and eventually achieves the level initially found at Y. Further, once this new level is attained at X, it remains there. Please confirm that based on your Table 1 results, workhours in the manual labor sorting operations in facility X would be expected to exceed those initially seen in facility Y. If you do not confirm, please explain the increase in hours predicted by your Table 1 results.

Response to USPS/UPS-T1-43. Not confirmed. If the models upon which Table 1 is based fit the data exactly, then if facilities X and Y wound up with the same volume, they would wind up with the same workhours. However, the models do not fit the data exactly. Random factors not explicitly accounted for by the model could cause workhours at facility X to be higher or lower than those at facility Y.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-44. Please refer to page 39 of your testimony.

a. Please confirm that it is your opinion that the long-run variability of mail processing labor costs exceeds the short-run variability of mail processing labor costs.

b. Please explain how much time it takes to move from the short-run to the long-run in the manual letter sorting activity.

Response to USPS/UPS-T1-44. In my direct testimony I discuss a number of factors that could influence the relationship between the short run and long run volume variability of mail processing labor costs. For example, on page 10 at lines 13-18, I state:

> High-volume periods could be characterized by the more extensive use of lower-cost temporary or casual workers. Conversely, high-volume periods could require the involvement of higher-cost senior or supervisory personnel in order to meet mail processing schedules and maintain service standards. It is also possible that maintenance of service standards during high-volume periods could involve greater use of overtime and greater amounts of overtime pay.

As I noted in my response to interrogatory USPS/UPS-T1-23, most firms rely on overtime as a short run measure, hiring additional straight-time workers when they are confident that the increased volume they are attempting to meet will persist in the future. If the Postal Service follows this procedure, the factors cited above would tend to create a situation in which mail processing labor costs were more variable over the short run than over the long run.

On page 39, line 18, through page 40, line 4, of my direct testimony I state:

> It is possible that productivity might increase in response to a temporary surge in volume. Workers might increase the pace of work, take fewer or shorter breaks, or adopt other strategies for dealing with the added workload. In his responses to interrogatories, Bradley concedes this point.[1] Such increases in productivity may not be sustainable, however, and if the increase in volume persists it may eventually be necessary to hire additional workers to handle the increased workload. Thus, after an initial surge it is likely that productivity would decline to something closer to its original level.

The effect of the behavior described above would be to make mail processing labor costs less variable over the short term than over the long term.

I have not conducted a study to determine which of the two factors described above dominates, or whether other factors might also come into play to influence the relationship between short run and long run volume variabilities. However, the contrast between Bradley's short run results and the longer run results provided by the cross-sectional model does suggest that the volume variability of mail processing labor costs is higher over the long run than over the short run.

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[1]Response to UPS/USPS-T14-54.

ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE

USPS/UPS-T1-45. Please refer to your testimony at pages 16-17, where you state:

> It is difficult to imagine actual operational practices that would . . . bring an activity to life for only a single accounting period. Data entry errors, such as recording piece handlings under the wrong activity or with the wrong facility identifier, would seem to provide a plausible explanation.

a. Please confirm that it is your testimony that the occurrence of a site with one observation is likely to be due to a data entry error such as a wrong facility identifier. If you do not confirm, please explain fully.

b. Please state for how many consecutive periods a site must report data for an operation before it is reasonable to believe that the recording of the operation is not due to data entry errors.

Response to USPS/UPS-T1-45. (a) Confirmed. However, I do not believe that it is impossible for an activity to be in operation at a particular site for only a single accounting period. Such situations may exist.

(b) One may reasonably accept the possibility that even when only one recorded period of data is present, it may represent real data as opposed to data entry errors. However, when there are very few observations compared to the total possible number of observations, this fact raises suspicions regarding data quality. In such a case investigation is warranted.

DECLARATION

I, Kevin Neels, hereby declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information, and belief.

Kevin Neels

Dated: February 9, 1998

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document in accordance with section 12 of the Commission's Rules of Practice.

John E. McKeever

Dated: February 10, 1998
Philadelphia, PA